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ABSTRACT

Development of an instrument to measure baseline levels of applied Total Quality Management (TQM) practices in South Dakota before the introduction and dissemination of TQM theory to the state's educational leaders is described. Using the interpretation of Deming's 14 points that was developed by J. J. Bonstigl, a 115-item initial item pool was developed. Through a modified Q-sort procedure, items were examined by a panel of 15 judges for clarity and appropriateness to establish content validity. After sorting was completed, the 68 items remaining (approximately 4 per subscale) were pilot tested, using responses of 77 practicing kindergarten through grade 12 teachers from 12 schools in 6 districts. An analysis to establish reliability coefficients (Cronbach's coefficient alpha) for the 14 subscales and the total test revealed alpha coefficients (>.71) for 10 subscales and a total instrument reliability of .96. It was determined that two subscales need further development to strengthen differentiation within Mass Inspection (Deming point 3) and Elimination of Targets (Deming point 10). The subscale for point 4 will be discarded because vendor service and quality concerns are moot in a public enterprise subjected to the lowest bidder mentality. Two tables and an appendix of recommendations complete the discussion. (Contains 12 references.) (SLD)

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"THE DEVELOPMENT OF A SURVEY INSTRUMENT ON SOUTH DAKOTA'S SCHOOL DISTRICT LEADERSHIP CLIMATE AS RELATED TO DEMING'S FOURTEEN POINTS"

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This paper describes the process implemented in the development of an instrument to measure baseline levels of applied Total Quality Management (TQM) practices in South Dakota prior to the introduction and dissemination of TQM theory to the state's educational leaders.

Using the interpretation of Demings 14 points as developed by Bonstingl, the investigators developed a total of 115 items (approximately eight per each of the 14 points) for the initial item pool.

Using a modified Q sort procedure the items were subjected to a panel of 15 judges who examined them for clarity and appropriateness. This process was initiated to establish content validity.

After the sorting process was completed, 68 items remained (>4 per subscale) and were subjected to pilot testing using the responses of 77 practicing K-12 teachers representing 12 school buildings in six different school districts. An analysis was performed to establish reliability coefficients (Cromback's Coefficient Alpha) for the 14 subscales and the total test. Ten of the subscales examined reveled Alpha coefficients >.71 (range = .71 to .91) and a total instrument reliability of .96. It was determined that two of the subscales are in need of further development to strengthen differentiation within Mass Inspection (Deming point 3) and Elimination of Targets (Deming point 10). One of the subscales Point 4 will be discarded because vendor service and quality concerns are moot in a public enterprise that is subjected to the lowest bidder mentality.

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The Development of a Survey Instrument on South Dakota's School District Leadership Climate as Related to Deming's Fourteen Points

INTRODUCTION

During the past decade, there has been growing concern regarding education in the United States. In 1983, the National Commission on Excellence in Education published its famous pessimistic report titled, A Nation At Risk, which mandated intensive and massive restructuring of American education. Other commissions and reports followed at both state and federal levels. In response, many educational administrators called for a more systematic approach in the restructuring movement and suggested that Deming's Fourteen Points and Total Quality Management (TQM), which radically affected leadership management in industry, should also be applied in education (Rhodes, 1990; Melvin, 1991; and Bonstingl, 1992).

The Fourteen Points are a management philosophy and process with each point having an inherent inter-dependence upon all other points. An educational version of the Fourteen Points is as follows:

1. Constancy of purpose.
2. Adopt the new philosophy.

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3. Cease dependence on mass inspection.

4. Cease doing business on price tag alone.

5. Continual improvement of process.

6. Institute training on the job.

7. Institute leadership.

8. Drive out fear.

9. Break down barriers (among) departments.

10. Eliminate slogans, exhortations, and targets.

11. Eliminate numerical quotas.

12. Allow pride in workmanship.

13. Institute a program of self-improvement.

14. Do it. (Reilly, 1991)

We believe that ultimately school districts in South Dakota and other states will be influenced by Deming's Fourteen Points and TQM in their restructuring efforts. This influence is beginning to be shown through the 1993-1994 theme for the South Dakota LEAD Project and in the South Dakota Modernization (restructuring) Project's seven components, which are as follows:

1. A clear vision of how the school will function, and a strategic plan for bringing everyone up to speed.

2. Expanded learning environments, opening the door to the community for learning opportunities and involving the community in school planning.

3. Commitment to outcome based education, where students advance by reaching clearly defined exit outcomes, not by just putting in time. There must

also be a system for measuring student outcomes, and a policy of using student achievement as the basis for school planning.

4. Use of authentic tasks... applying subject matter to the real world instead of relying on textbooks and contrived exercises.
5. Commitment to technical literacy, not only regarding today's technology, but helping students feel comfortable enough to adapt to tomorrow's technology.
6. Entrepreneurial studies, helping students see ways of creating their own jobs in the next century.
7. Cooperative learning, helping students learn to work as team players. (Higbee, p7)

After reviewing the literature and finding no instruments available to measure perceived use of TQM and the Fourteen Points, the investigator's elected to develop an instrument to measure the existing level of applied TQM practices in the schools and to establish this level of application prior to any of the training/awareness efforts. The administration of such an instrument to a comprehensive sample of South Dakota's teachers would, we believe, establish a baseline for future studies.

METHODOLOGY

The instrument was developed by the authors using the following procedures.

References: After extensive reading on Deming and applied TQM,

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the authors' settled on the baseline conceptualization of Deming's 14 Points as presented by Bonstingl (1992). We considered this to be the single most comprehensive and accepted treatise on the application of Deming's theories to the school setting. A copy of Bonstingl's educational interpretation of Deming's Fourteen Points is found in Appendix A.

Format: A pool of items was developed in statement form based on each of the Fourteen Points. Both positive and negative statements were developed for an initial total of 101 survey items. It was intended that, through the following steps in the process, the actual number of items be reduced from 101, to 68, and an eventual total of 52 items (four statements each for thirteen of the Fourteen Points). Formatting sources included organizational climate instruments such as The Profile of Organizational Practices (POP) authored by Zigarmi, Edeburn, and Blanchard (1982), and the Staff Development and School Climate Assessment Questionnaire authored by Zigarmi and Edeburn (1980).

VALIDITY

Content Validity: A Q-Sort established the content validity. Four educators in higher education served as an initial jury by matching the randomly mixed 101-item statements to the perceived point it represented. The jurors were also given Bonstingl's educational interpretation of the Fourteen Points to use as a reference for each of the points. The results of their choices were analyzed and those items having the most consensus were kept

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and the others discarded. Some of the remaining statements were reworded in an effort to gain more clarity and content integrity.

A new total of sixty-eight items remained. The final instrument is intended to be used with administrators in education, therefore thirteen individuals with educational administration experience were asked to serve as the jury for the second phase of this process. They included three elementary principals, two secondary principals, two superintendents, four university professors, and two deans (one from education and one from library science). All thirteen agreed to participate and matched the remaining randomly mixed statements to each of the Fourteen Points. Again, each was supplied with Bonstingl's educational interpretation of the Fourteen Points and directions for completing the process.

A Q-Sort was again done to determine consistency between each of the statements and its perceived point. The data determined in this analysis revealed that there was definite consensus regarding the matching of points for the majority of the statements except for the last point. The fourteenth point is somewhat of a synthesis of the preceding thirteen points which directs the action to carry out this point. At that time, it was determined that only the first thirteen points and their statements would be used in the survey. The remaining statements were reviewed and some were minimally revised, again to strengthen clarity (i.e., consistent use of the terms "school" and "school district") and the connection to its perceived point. Several of the jurors had suggested revisions and these were also

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considered in the revision process. Due to the consensus determined by the jurors, it is felt that content validity has been established.

RELIABILITY

Using the 68 items, a pilot instrument was designed using a six point Likert Scale application (Strongly Disagree, Disagree, Partly Disagree, Partly Agree, Agree, and Strongly Agree). The instrument, tentatively titled the Total Quality Management in Education Opinion Survey, was piloted with a total of eighty-six respondents. The respondents included 38 elementary teachers, 22 secondary teachers, 4 administrators, and 22 other educators (e.g., counselors, special education). The application of this process was used to address internal consistency and reliability.

The purpose of establishing reliability is to reduce measurement error on a specific instrument. In the application of internal consistency and reliability, an instrument is considered reliable if the items are interrelated. The process used in this study roughly paralleled the Situational Leadership Follow-Up Survey: A Pilot Study in Educational Administration, authored by Edeburn and Lingren (1990), and the Knowledge System Inventory: Instrument Development and Pilot Study, authored by Johnson and Edeburn (1991), studies relative to reliability/item analysis procedures. Data were retrieved and subjected to computer analysis utilizing TESTAT, a computer program which employs Cronbach's Coefficient (Alpha) (Cronbach, 1951) to determine the internal consistency reliability coefficient for

each subscale and for the total instrument. TESTAT also provides the researcher with individual item analyses so that individual items can be examined, purged, or adjusted in the instrument process. The results of these analyses are reported in tables 1, 2, and 3.

RESULTS

The summary table of means, standard deviations and reliability coefficients are reported in Table 1. Of the 12 subscales analyzed, 10 revealed acceptable alpha scores. These included scales 1, 2, 5, 6, 7, 8, 9, 11 12, and 13. The overall reliability score of .96 is excellent. Three of the subscales need further work as indicated by the lower reliability coefficients. The investigators have determined that the two subscales, Mass Inspection (subscale 3) and Numerical Quotas (subscale 10), are interrelated. Our immediate reaction is that educators, especially teachers, are generally mixed in regard to their feelings about testing, testing programs, and numerical measurement schemes of any variety. Coupled with this is the interpretive position taken by Deming in regard to these applications. His approach to mass inspection is negative while his approach to systematic statistical analysis of production elements in the interest of improving systemic functioning is positive. These conceptual differences coupled with educator's dependency on and/or rejection of standardized testing processes apparently "muddied the water" in these subscales. The authors spent a good deal of time writing, re-writing and revising the

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items in anticipation of this potential confusion. We will have to examine the individual item responses (see tables 2 and 3) carefully in further efforts.

In regard to subscale 4, End Price Tag, the researchers anticipated similar results. Whereas Deming encourages organizations in the commercial sector to use vendors who provide quality materials and services regardless of price, educators as participants in the public sector have always been at the mercy of the lowest bidder. We believe that the apparent confusion with the five answers to items in subscale 4, is due to this paradigm shift and hope to find further clarification in item analysis.

In summary, the authors are extremely pleased with the overall results of the reliability analysis. Even though the analysis has indicated that some work is yet to be done, the analysis has made that job easier.

The individual item analysis was summarized in Table 2. As can be noted in the results, all of the items (see the R-SCALE column) with the exception of item 57 were >.30, our pre-determined cut off level. What remains to be accomplished is a more detailed scrutiny of the item statements with scores of <.30 in the interest of determining whether or not clarity has been effected by word juxtaposition or sentence construction. This process has already been initiated. Several of these items have "or" choices which are, we believe, contributing to the lower correlation coefficient.

Table 3 was used to display the distribution of item

responses by percentages. This effort was initiated to visually display the distributions and to determine whether or not the reversed items (see (REV) column) were appropriate. As can be noted, items 2, 4, 8, 16, 17, 18, 21, 27, 38, 51, 63, and 65, are reverse scored. This procedure is used to provide variety to response reactions of the participants and to approach questions from the negative point of view. The key to the reversal process is that SA scores of 6 are reversed to a score of 1, scores of 5 are reversed to 2 and so on. The investigators are pleased with the results both in regard to the distribution and reversals.

DISCUSSION

The need for an overall management and administration process in education has traditionally been that of scientific management, as espoused by Fredrick Taylor at the turn of the century. One example theory among many constituting ensuing support and further exploration of that philosophy is Max Weber's Theory of Bureaucracy and the major constructs of hierarchy of offices, rules and regulations, specialization of tasks, impersonality, written records, etc.(Sliver, p75-6). The theories that followed explained and advocated scientific management but did not promote overall success for each individual in the system, rather, they held to the idea of "survival of the fittest."

Schools became dependent upon score results as the primary means of justification for existence. The new justification, or standard for success, is to assist the student in learning and

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have every student learn to the best of that student's ability. This is where an overall process instead of a class/student comparison and assessment system is needed. Deming's Fourteen Points has the management answer that advocates an individual student (customer) success oriented process.

By learning how closely aligned individual school districts are to the Fourteen Points at any given time, districts would be able to work on the low alignment points. The survey reported upon in this paper is part of that instrument development.

The results of this survey and the resulting work now being done to strengthen the instrument has promoted more research for a more positive school district alignment to the Fourteen Points and TQM. Although this instrument is being developed for use in South Dakota school districts, we feel that the instrument will have an application for use in other states as well.

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APPENDIX 1

Bonstingl, 1992, p.77-82.

1. Create a constancy of purpose for improvement of product and service.

School must focus on helping students to maximize their own potentials through continuous improvement of teachers' and students' work together. Maximization of test scores and assessment symbols is less important than the progress inherent in the continuous learning process of each student.

2. Adopt the new philosophy.

School leaders must adopt and fully support the new philosophy of continuous improvement through greater empowerment of teacher-student teams. Cynical application of the new philosophy, with the sole intent of improving district-wide scores, destroys interpersonal trust which, is essential to success.

3. Cease dependence on mass inspection.

Reliance on tests as the major means of assessment of student production is inherently wasteful and often neither reliable nor authentic. It is too late at the end of the unit to assess students' progress if the goal is to maximize their productivity. Tests and other indicators of student learning should be given as diagnostic and prescriptive instruments

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throughout the learning process. Learning is best shown by students' performance, applying information and skills to real-life challenges. Students must be taught how to assess their own work and progress if they are to take ownership of their own educational processes.

4. End the practice of doing business on price tag alone.

Build relationships of trust and collaboration within the school, and between school and the community. Everyone's roles as supplier and customer must be recognized and honored. Work together whenever possible to maximize the potentials of students, teachers, administrators, and the community.

5. Improve constantly and forever the system of production and service.

School administrators must create and maintain the context in which teachers are empowered to make continuous progress in the quality of their learning and other aspects of personal development, while they learn valuable lessons from (temporary) failures.

6. Institute programs of training.

School leaders must institute programs of training for new employees unfamiliar with the specific culture and expectations of the school. Effective training programs show new teachers how to set goals, how to teach effectively, and how to

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assess the quality of their work with students. Teachers must also institute programs in which students learn how to set learning goals, how to be more effective in their school work, and how to assess the quality of their own work. Teachers should show students be attitude and actions what a good learner is all about (Educators learn how to be educators from the modeling they receive as students.)

7. Institute leadership.

School leadership consists of working with teachers, parents, students, and members of the community as coach and mentor so that the organizational context in which all students' growth and improvement is valued and encouraged can be maximized by teachers and students, parents, and community members who support the common effort. Leading is helping, not threatening or punishing.

8. Drive out fear.

Fear is counterproductive in school as it is in the workplace. Fear is destructive of the school culture and everything good that is intended to take place within it. Institutional changes must reflect shared power, shared responsibilities, and shared rewards.

9. Break down barriers between staff areas.

Teacher and student productivity is enhanced when departments combine talents to create more integrated

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opportunities for learning and discovery. Create cross-departmental and multi-level quality teams to break down role and status barriers to productivity.

10. Eliminate slogans, exhortations, and targets for the workforce.

Teachers, students, administrators, families, and community members may collectively arrive at slogans and exhortations to improve their work together, as long as power, responsibility, and rewards are equitably distributed. When educational goals are not met, fix the system instead of fixing blame on individuals.

11. Eliminate numerical quotas.

Assignments and tests that focus attention on numerical or letter symbols of learning and production often do not fully reflect the quality of student progress and performance. When the grade becomes the bottom-line product, short-term gains replace student investment in long-term learning, and this may prove counter-productive in the long run.

12. Remove barriers to pride and joy in workmanship.

Teachers and students generally want to do good work and feel pride in it. Schools must dedicate themselves to removing the systemic causes of teacher and student failure through close collaborative efforts.

13. Institute a vigorous program of education and retraining.

All of the school's people benefit from encouragement to enrich their education by exploring ideas and interests beyond the boundaries of their professional and personal worlds.

14. Take action to accomplish the transformation.

School personnel at all levels (including students) must put this new philosophy into action so it becomes imbedded into the deep structure and culture of the school. Teachers and students alone cannot put the plan into effect. Constant top-level dedication to full implementation must be supported by a critical mass of school and community people to implement the plan and make it stick. (Bonstingl, 1992, p.77-82)

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TABLE #1

SUMMARY TABLE OF MEANS, STANDARD DEVIATIONS AND RELIABILITY COEFFIEIENTS (ALPHA)*

POINTS	# OF ITEMS	MEANS	SD	ALPHA
1. Constancy of Purpose	7	29.30	5.98	.88
2. New Philosophy	4	17.64	3.38	.73
3. Mass Inspection	5	15.79	2.55	.16
4. End Price Tag	5	16.70	2.89	.26
5. Improve Constantly	4	16.27	3.90	.81
6. Training Programs	5	16.07	5.09	.80
7. Institute Leadership	7	26.17	7.80	.91
8. Drive Out Fear	6	22.34	5.10	.80
9. Break Down Barriers	6	21.21	4.95	.71
10. Eliminate Targets	5	17.97	2.59	.22
11. Numerical Quotas	3	11.05	1.55	.53
12. Remove Pride Barrier	6	27.24	4.65	.78
13. Retraining Program	5	19.98	5.35	.87
SUMMARY TOTALS				
Summary of above 13 Points=	68	257.72	42.90	.96

Note: The summary total is implied to equal Deming's last point which is, Point 14, Take Action.

*Cronbach, 1951.

TABLE #2

INDIVIDUAL ITEM ANALYSIS INCLUDING SUBSCALE, MEANS AND RELIABILITY COEFFICIENTS BY SUBSCALE AND TOTAL TEST

ITEM	SCALE	MEAN	SIGMA	R(TOTAL)	R(SCALE)
1	9	3.36	1.422	0.0549	0.3180
2	10	4.09	1.158	-0.0105	0.4634
3	7	3.88	1.350	0.5243	0.6209
4	10	2.88	1.289	-0.5066	0.3303
5	2	4.45	1.309	0.7590	0.8451
6	4	4.17	1.193	0.5781	0.5389
7	6	3.16	1.516	0.5265	0.7342
8	3	2.59	0.981	0.0730	0.6452
9	5	4.06	1.375	0.6546	0.8212
10	1	4.70	1.121	0.7145	0.7904
11	4	4.62	0.838	0.1187	0.3369
12	1	4.22	1.016	0.7846	0.8270
13	2	3.58	1.325	0.7147	0.7698
14	12	4.12	1.434	0.7510	0.7957
15	9	3.49	1.345	0.6612	0.7339
16	3	3.65	1.246	-0.4403	0.3836
17	11	3.78	1.104	-0.3301	0.4261
18	1	3.66	1.167	0.4007	0.5408
19	12	4.00	1.347	0.6070	0.7552
20	9	3.44	1.290	0.4125	0.5497
21	4	2.30	1.090	0.2901	0.6613
22	8	3.94	1.261	0.7068	0.8384
23	2	5.40	0.893	0.3779	0.6260
24	8	3.63	1.406	0.7486	0.8102
25	12	5.05	0.888	0.6732	0.7346
26	6	3.38	1.296	0.5717	0.6999
27	4	2.19	1.271	-0.1945	0.3671
28	6	3.16	1.438	0.6545	0.8189
29	7	3.09	1.403	0.6978	0.7706
30	12	4.53	1.042	0.4908	0.6110
31	1	4.45	1.008	0.6658	0.7414
32	13	3.74	1.357	0.7420	0.8121
33	10	3.64	1.284	0.7389	0.3744
34	8	3.42	1.289	0.5856	0.7761
35	9	3.62	1.173	0.6856	0.7606
36	13	4.08	1.260	0.6715	0.7296
37	6	3.06	1.145	0.5928	0.7261
38	3	2.78	1.165	-0.0175	0.6541
39	12	5.56	0.756	0.3155	0.4370
40	8	4.05	1.180	0.7395	0.7835
41	5	4.21	1.259	0.7101	0.7612
42	7	3.78	1.376	0.8179	0.8612
43	8	3.36	0.975	0.3787	0.4991
44	7	3.42	1.334	0.8407	0.8499
45	11	3.60	1.049	0.5022	0.4750
46	10	3.60	1.184	0.7028	0.4323
47	9	3.35	1.255	0.7694	0.7553
48	2	4.21	0.954	0.7077	0.7241
49	9	3.95	1.247	0.8192	0.7716
50	11	3.66	0.972	-0.0538	0.6031
51	10	3.74	1.340	-0.3874	0.4707
52	13	3.92	1.408	0.8240	0.8790
53	1	4.31	1.144	0.7189	0.7816
54	6	3.30	1.398	0.6728	0.7572
55	5	4.13	1.076	0.7338	0.7874
56	13	4.35	1.283	0.7350	0.8458
57	3	4.26	1.025	0.6347	0.1452
58	12	3.99	1.115	0.7592	0.7847
59	7	3.93	1.371	0.7761	0.8446
60	7	4.01	1.393	0.8227	0.9011
61	4	3.42	1.280	0.4614	0.6040
62	7	4.06	1.375	0.7407	0.8385
63	3	2.51	0.873	-0.0633	0.6026
64	13	3.88	1.280	0.6849	0.7904
65	8	3.94	1.071	0.3258	0.4590
66	5	3.87	1.159	0.7959	0.8309
67	1	4.03	1.061	0.7288	0.8043
68	1	3.92	1.287	0.8451	0.8764

TABLE #3

INDIVIDUAL ITEM CHOICE DISTRIBUTION BY PERCENTAGES

ITEM	REV	KEY	ZERO	1	2	3	4	5	6
1	0	0	0	10	19	27	21	15	8
2	1	0	1	5	44	20	19	10	1
3	0	0	0	7	10	16	28	30	8
4	1	0	0	3	9	17	23	35	12
5	0	0	0	5	6	7	26	36	21
6	0	0	0	3	5	17	31	31	12
7	0	0	1	21	14	19	23	17	5
8	1	0	0	0	5	12	33	41	10
9	0	0	0	6	7	23	16	35	13
10	0	0	0	0	6	9	20	40	26
11	0	0	5	0	0	5	34	43	14
12	0	0	0	0	7	16	30	41	6
13	0	0	2	8	14	21	24	27	3
14	0	0	1	8	8	8	28	31	15
15	0	0	2	9	19	14	27	28	1
16	1	0	1	7	22	21	30	16	2
17	1	0	3	5	26	26	28	13	0
18	1	0	0	2	27	26	29	13	3
19	0	0	0	5	13	16	19	40	8
20	0	0	2	10	14	19	31	22	1
21	1	0	2	0	5	8	24	34	27
22	0	0	0	5	9	17	34	26	9
23	0	0	0	0	2	2	7	30	58
24	0	0	0	10	15	14	24	34	2
25	0	0	0	0	2	2	16	47	33
26	0	0	0	9	19	20	31	19	2
27	1	0	0	3	3	7	15	36	35
28	0	0	0	10	31	17	19	16	6
29	0	0	0	14	24	23	20	14	5
30	0	0	0	1	3	8	31	40	16
31	0	0	0	0	3	12	37	31	16
32	0	0	0	7	13	19	31	21	9
33	0	0	1	7	15	17	27	31	1
34	0	0	0	8	20	19	31	20	2
35	0	0	1	5	15	21	30	28	0
36	0	0	0	3	12	13	24	41	7
37	0	0	2	9	24	26	28	10	0
38	1	0	0	3	5	15	29	38	9
39	0	0	1	1	0	0	1	33	64
40	0	0	0	1	10	20	29	30	9
41	0	0	0	3	7	15	28	33	14
42	0	0	0	8	12	16	30	26	8
43	0	0	0	1	20	33	36	9	1
44	0	0	0	12	14	20	34	17	3
45	0	0	3	2	15	19	42	17	1
46	0	0	0	3	14	30	28	20	5
47	0	0	0	12	10	30	28	19	1
48	0	0	0	1	2	19	35	38	5
49	0	0	0	1	16	16	27	31	8
50	0	0	2	2	8	27	44	14	2
51	1	0	1	12	20	22	27	15	3
52	0	0	0	5	12	23	26	17	17
53	0	0	0	2	6	10	34	35	13
54	0	0	0	9	26	19	24	16	6
55	0	0	1	2	5	17	33	36	6
56	0	0	0	2	8	10	33	24	22
57	0	0	0	0	6	16	34	35	9
58	0	0	2	2	7	19	36	27	7
59	0	0	0	7	9	19	23	33	9
60	0	0	0	7	9	14	28	29	13
61	0	0	1	10	14	19	38	14	3
62	0	0	0	6	12	12	23	37	10
63	1	0	0	0	3	6	38	43	9
64	0	0	0	6	10	17	27	35	5
65	1	0	0	2	37	22	30	7	1
66	0	0	1	3	10	16	37	27	5
67	0	0	1	0	9	17	40	24	8
68	0	0	0	5	12	15	34	26	9